

In the Claims

Please cancel claims 26-45 without prejudice.

Please substitute the following amended claims for those currently pending:

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1. (Currently amended) An implantable medical device ~~with~~ having an efficient recharging coil, comprising:
- a housing having an interior cavity, a proximal face, and an electrical feedthrough;
- electronics carried in the housing interior cavity and configured to perform a medical therapy;
- a rechargeable power source carried in the housing interior cavity and coupled to the electronics;
- a secondary recharging coil coupled to the electronics and rechargeable power source, the secondary recharging coil having a distal side; and,
- a generally planar magnetic shield placed on a the distal side of the ~~receiving~~ recharging coil to improve recharging efficiency, the shield being generally perpendicular to an axis of the recharging coil and the shield located between the recharging coil and the electronics.
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2. (Original) The implantable medical device as in claim 1 wherein the magnetic shield improves recharging efficiency by improving electromagnetic coupling between the secondary recharging coil and a primary recharging coil.

3. (Currently amended) The implantable medical device as in claim 2 wherein the magnetic shield improves the recharging efficiency ~~is improved~~ by creasing flux lines that couple with the ~~receiving~~ recharging coil from the primary recharging coil.

4. (Currently amended) The implantable medical device as in claim 2 wherein the magnetic shield improves the ~~improved~~ electromagnetic coupling is to greater than 10 percent coupling efficiency at about one centimeter.

5. (Currently amended) The implantable medical device as in claim 1 wherein recharging efficiency is improved by decreasing flux lines emanating from a primary coil that couple with the housing.

6. (Currently amended) The implantable medical device as in claim 5 wherein the magnetic shield provides improved recharging efficiency ~~is improved~~ through reduced eddy currents in the housing.

7. (Currently amended) The implantable medical device as in claim 6 wherein the magnetic shield provides reduced eddy currents ~~during recharging also reduces~~ medical device temperature rise during recharging of the power source through reduced eddy currents in the housing.

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8. (Currently amended) The implantable medical device as in claim 7 wherein the implantable medical device temperature rise ~~of the implantable medical device~~ during recharging is less than two degrees Celsius.

9. (Cancelled).

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10. (Currently amended) The implantable medical device as in claim 1 wherein the magnetic shield is a material with high magnetic permeability.

11. (Currently amended) The implantable medical device as in claim 10 wherein the magnetic shield is selected from the group consisting of: amorphous metal film, amorphous metal wire, and magnetic alloy.

12. (Original) The implantable medical device as in claim 1 wherein the magnetic shield includes eddy cuts to reduce eddy current flow through the magnetic shield.

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13. (Currently amended) The implantable medical device as in claim 1 wherein the magnetic shield has a central opening.

14. (Currently amended) The implantable medical device as in claim 1, ~~further comprising~~ wherein the magnetic shield comprises a first magnetic shield and a second

magnetic shield and a first insulator placed between a the first magnetic shield and a the second magnetic shield.

15. (Currently amended) The implantable medical device as in claim 14, ~~further comprising~~ wherein the magnetic shield further comprises a third magnetic shield and a second insulator placed between a the second magnetic shield and a the third magnetic shield.

16. (Currently amended) The implantable medical device as in claim 14 15 wherein the first insulator and a the second insulator are selected from the group consisting of: plastic, mylar, and tape.

17. (Currently amended) The implantable medical device as in claim 1 wherein the secondary recharging coil is carried on the proximal face of the housing and the magnetic shield is placed between the ~~receiving~~ recharging coil and the proximal face of the housing.

18. (Currently amended) The implantable medical device as in claim 1 wherein the secondary recharging coil is an external secondary recharging coil located remotely away from the housing.

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19. (Currently amended) The implantable medical device as in claim 1 wherein the ~~receiving~~ recharging coil is located in the housing interior cavity.

20. (Original) The implantable medical device as in claim 1 wherein the housing is an electric conductor

21. (Original) The implantable medical device as in claim 15 wherein the housing is selected from the group consisting of: titanium, ceramic, and epoxy.

22. (Original) The implantable medical device as in claim 1 wherein the medical device is selected from the group consisting of: neuro stimulators, pacemakers, defibrillators, drug delivery pumps, diagnostic recorders, and cochlear implants.

23. (Currently amended) An implantable medical device ~~with~~ having an efficient recharging coil, comprising:

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a housing having an interior cavity, a proximal face, and at least one electrical feedthrough;

electronics carried in the housing interior cavity and configured to perform a medical therapy;

a rechargeable power source carried in the housing interior cavity and coupled to the electronics;

a ~~receiving~~ secondary recharging coil coupled to the electronics and rechargeable power source; and,

a means for improving recharging efficiency placed on a distal side of the secondary recharging coil, the means having eddy cuts to reduce eddy current flow and the means located between the recharging coil and the electronics.

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24. (Currently amended) The implantable medical device as in claim 23 wherein a magnetic shield improves the recharging efficiency ~~is improved~~ by increasing flux lines that couple with the receiving recharging coil.

25. (Currently amended) The implantable medical device as in claim 23 wherein a magnetic shield improves the recharging efficiency ~~is improved~~ by decreasing flux lines that couple with the housing.

Claims 26-45 (cancelled).